Board of County Commissioners

Worksession

International Drive Transit Feasibility and Alternative Technology Assessment

April 27, 2021

Presentation Outline

- Background
- Study Analysis
- Study Recommendation
- Public Involvement
- Next Steps
- Summary

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Background

I-DRIVE DISTRICT
CONNECTED – COMPLETE – AUTHENTIC – PROSPEROUS – SUSTAINABLE

GOALS

Walkability, cycling, and transit

Diversity of uses and housing types

Civic and public gathering places

Infill and redevelopment opportunities

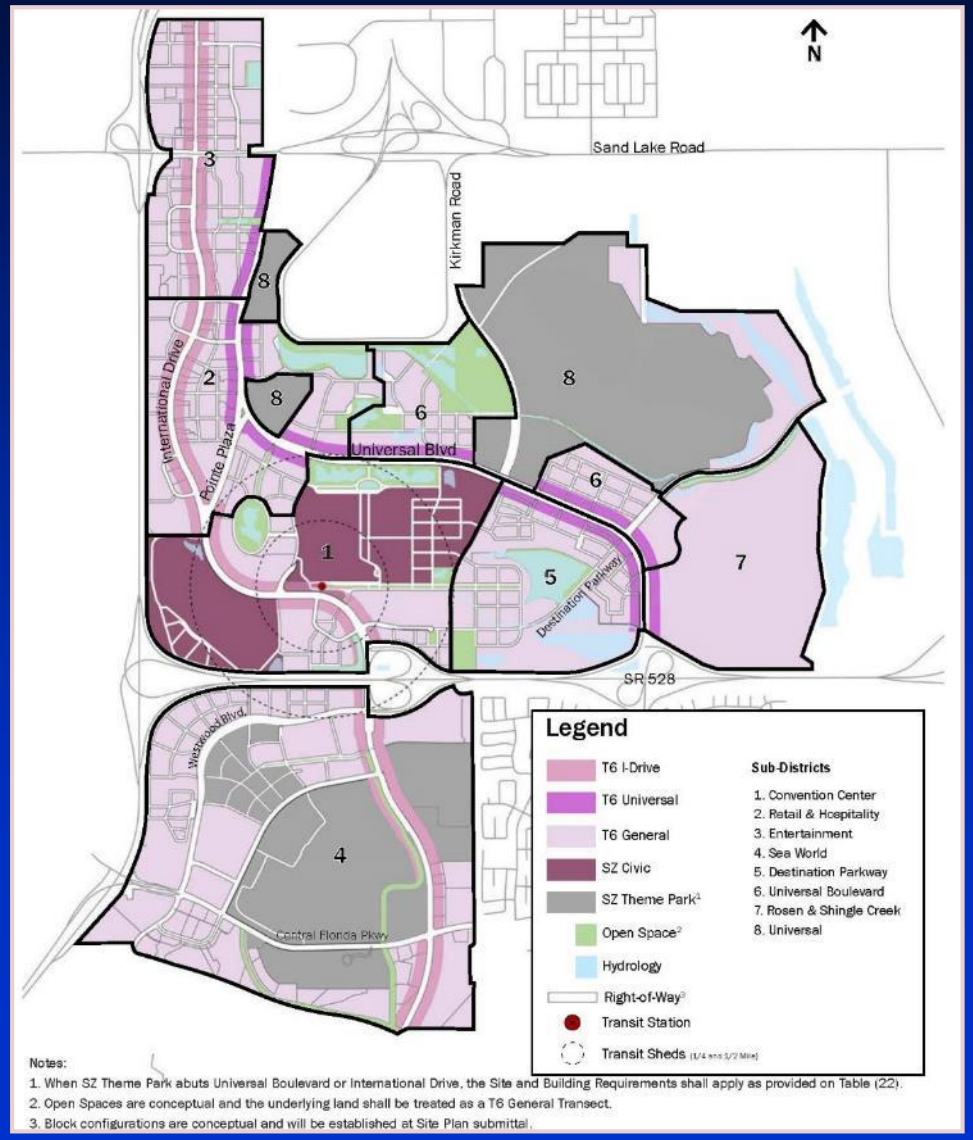
Resource conservation and efficiency

TRANSFORMATIVE TOOLS

- LAND DEVELOPMENT
- REGULATIONS
- PARKING
- MOBILITY

SUBDISTRICTS
(FOCUS AREAS)

1. CONVENTION CENTER
2. RETAIL & HOSPITALITY
3. ENTERTAINMENT
4. SEA WORLD
5. DESTINATION PARKWAY
6. UNIVERSAL BOULEVARD
7. ROSEN & SHINGLE CREEK

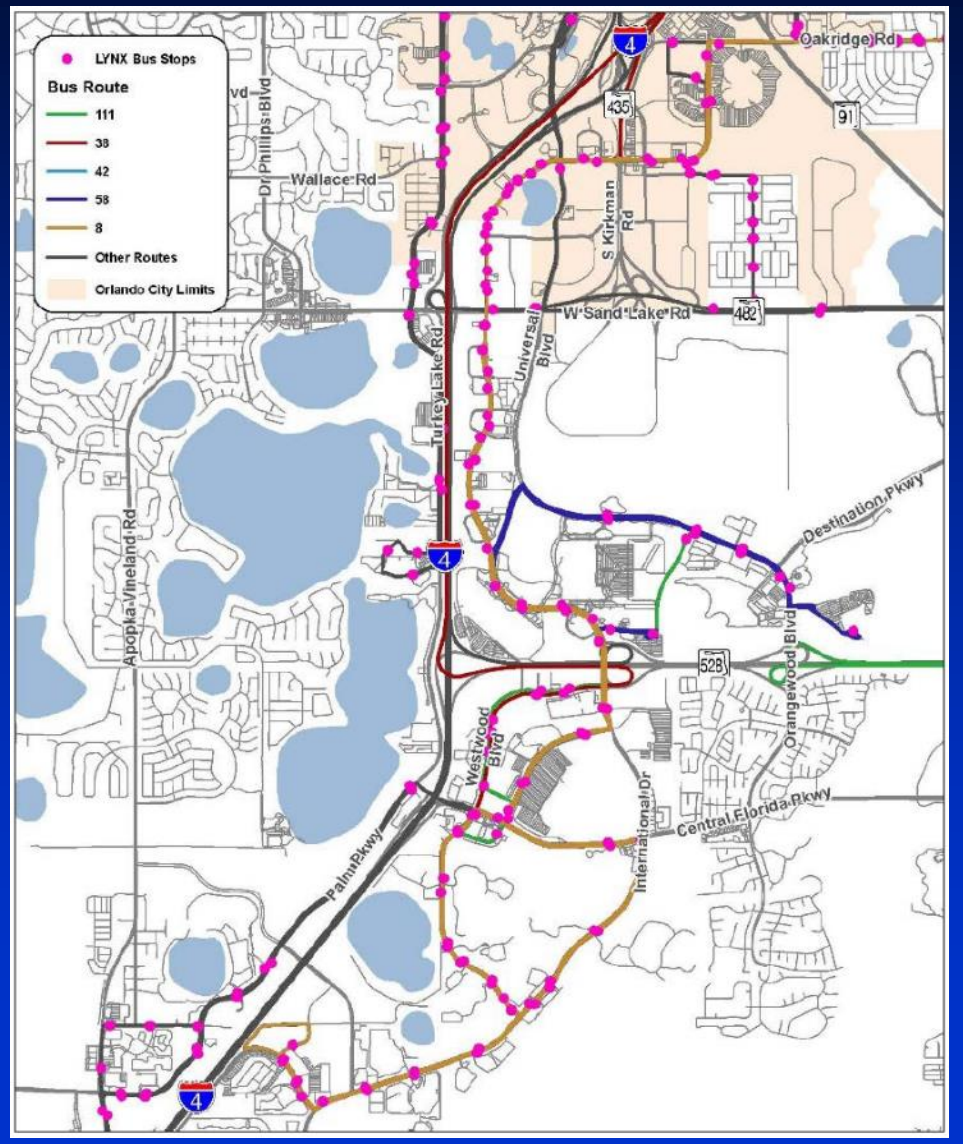


Background

- **LYNX Service**
  - Routes 8, 38, 42, 58 and 111
  - 15 to 30 Minute daytime and reduced night service
  - Average Daily ridership: 150 to 206 daily person trips

Highest Daily Ridership Locations

Stop	Daily On	Daily Off	Average Daily Total
I-Drive / Samoan Court	134	72	206
I-Drive / Jamaican Court	114	50	163
I-Drive / Convention Way	126	32	158
I-Drive / Sea Splash Way	25	128	153
I-Drive / Hawaiian Court	21	129	150

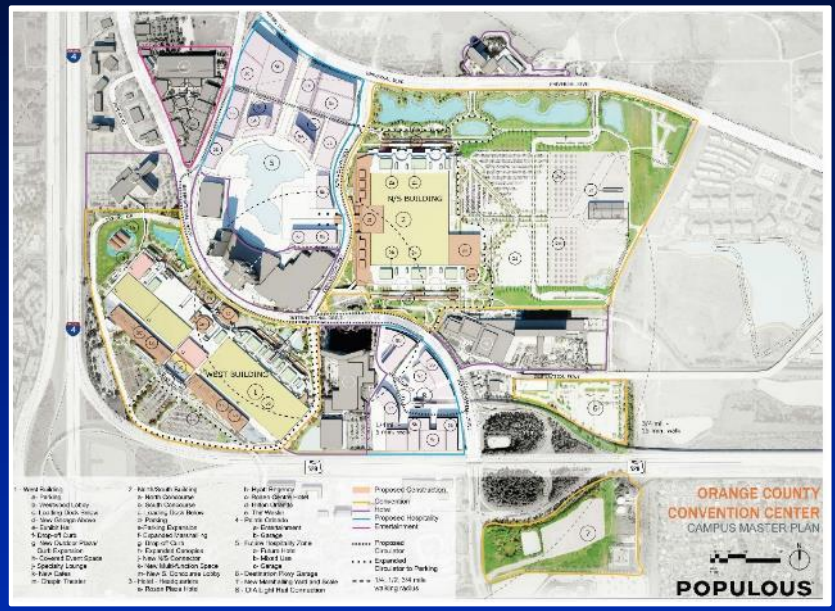


Background

- I-Ride Trolley Service
  - Operate daily 8:00am to 10:30pm
    - Factory Outlets to Universal Studios
    - Red & Green route, 20 & 30 min. frequency
  - 17 replica trolley buses
    - 41 seated, 54 total capacity
    - Two wheelchair positions and ADA lift
    - Over 2 decades of service with many years at or near fleet capacity

Background

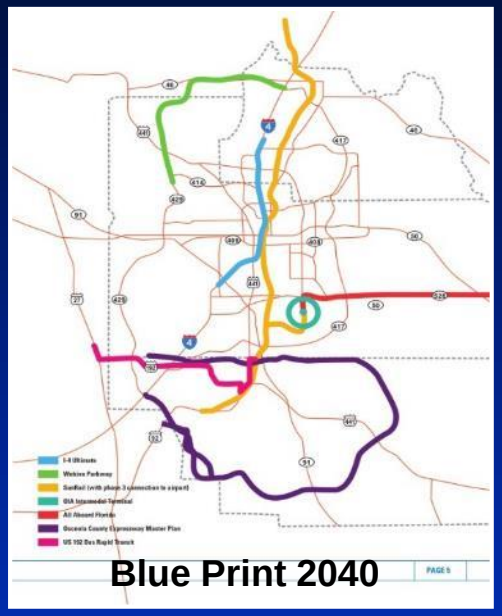
- **Convention Center Master Plan**
  - Project coordination
- **I-Drive "Interim" Transit Lanes**
  - Sand Lake Road to Destination Parkway
  - Construction:
    - Anticipated start late 2021/2022
    - Anticipated completion late 2023/2024
  - I-Ride Trolley, LYNX, charter buses, right turning vehicles and the new premium transit



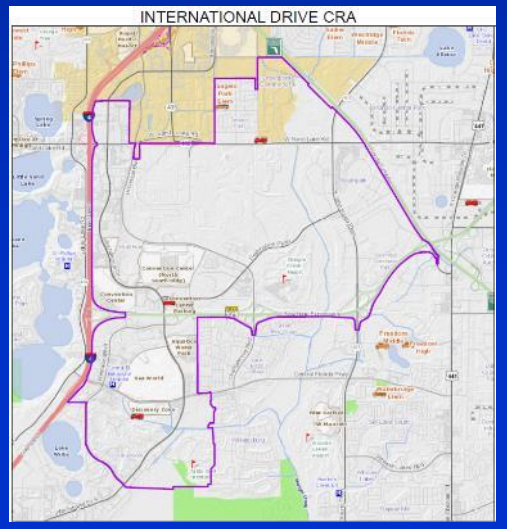
International Drive Transit Lanes Typical Section

Background

- I-Drive TFATA appears on the MetroPlan Orlando FY 2026/40 Prioritized Project List
- International Drive CRA Project List
- TFATA is categorized as a “premium transit” project. Defined by the Federal Transit Administration as “transit modes that provide higher comfort, capacity, speed and frequency than typical local bus operations”



Blue Print 2040



Background

Roadway Widening Study Scope

- Purpose and Need
- Existing Conditions
- **Design Criteria**
- Definition of Alternatives
- **Alternatives Analysis**
  - **Future Year Traffic Analysis**
  - **Access Management Determination**
- Recommended Alternative
  - **Typical Section**
  - **Opinion of Probable Costs**
- Public Involvement

Premium Transit Study Scope

- Purpose and Need
- Existing Conditions
- Definition of Alternatives
- **Evaluation of Viable Alternatives**
  - **System Operations Plan**
  - **Ridership Estimates**
  - **Opinion of Probably Costs (Capital and O&M)**
- Recommendation
- **Implementation Plan**
  - **Federal and State Funding**
  - **Local Financial Commitment**
- Public Involvement

Presentation Outline

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- **Study Analysis**
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Study Limits

- **International Drive**
  - Sea Harbor Drive to Sand Lake Road
- **Via Mercado**
  - International Drive to Universal Boulevard
- **Destination Parkway**
  - International Drive to Tradeshow Boulevard
- **Tradeshow Boulevard**
  - Destination Parkway to Universal Boulevard
- **Universal Boulevard**
  - Tradeshow Boulevard to Sand Lake Road
- **Incorporate results of the Kirkman Road Extension**
  - Universal Boulevard to Carrier Drive

Purpose and Need

- Support multimodal connectivity
  - Connecting the Orlando Region, the I-Drive Resort District and individual attractions
- Serve diverse travel markets and needs
  - Serving visitors, residents, conventioneers, workers
- Sustain economic competitiveness and development
  - Cost effective transit investment to support global competitiveness of the District and promote sustainable economic development

Definition of Alternatives

Screening of Transit Vehicles Technology

Vehicle Technology		Disposition
Automated Guideway Transit (AGT)	NOT ADVANCED	• High passenger capacity • Grade-separated / High construction cost
Monorail		• High passenger capacity • Grade-separated / High construction cost
Aerial Gondola		• Grade-separated requiring an aerial structure • Generally used as supplemental transit
Personal Rapid Transit (PRT)		• Serves individual trips • Grade- separated requiring an aerial structure / High construction costs
Premium Bus	ADVANCED	• Low cost solution • Bus can run in already-planned transit lanes without additional guideway construction
Modern Streetcar		• Length would accommodate high demands • Can run in planned transit lanes • Has appeal and permanence of rail transit infrastructure
AV/CV Shuttle		• Can accommodate trips without the need for a driver • Expandable and flexible – limited infrastructure requirements

Definition of Alternatives

Advanced Vehicle Technologies

Premium Bus

- Significant passenger capacity
- Similar features to rail vehicles
- Flexibility to maneuver around obstructions
- Easier to expand routes

Streetcar

- Significant passenger capacity
- High lever of rider comfort
- No ability to maneuver around obstructions
- Requires more infrastructure than bus modes

AV/CV Shuttle

- Limited passenger capacity
- Comfortable interior and seating
- Very flexible – can deviate from fixed route
- Still in demonstration phase

Evaluation of Viable Alternatives

Screening of Advanced Vehicle Technologies

Evaluation Criteria	Premium Bus	Modern Streetcar	AV/CV Shuttle
Capital Cost	Medium	Low	Medium
Capacity	High	High	Low
Rider Experience	High	High	High
Adaptability/Maneuverability	High	Low	High
Expandability	High	Medium	High
Proven Operating Experience	High	High	Low
Overall Summary			

High – Favorable

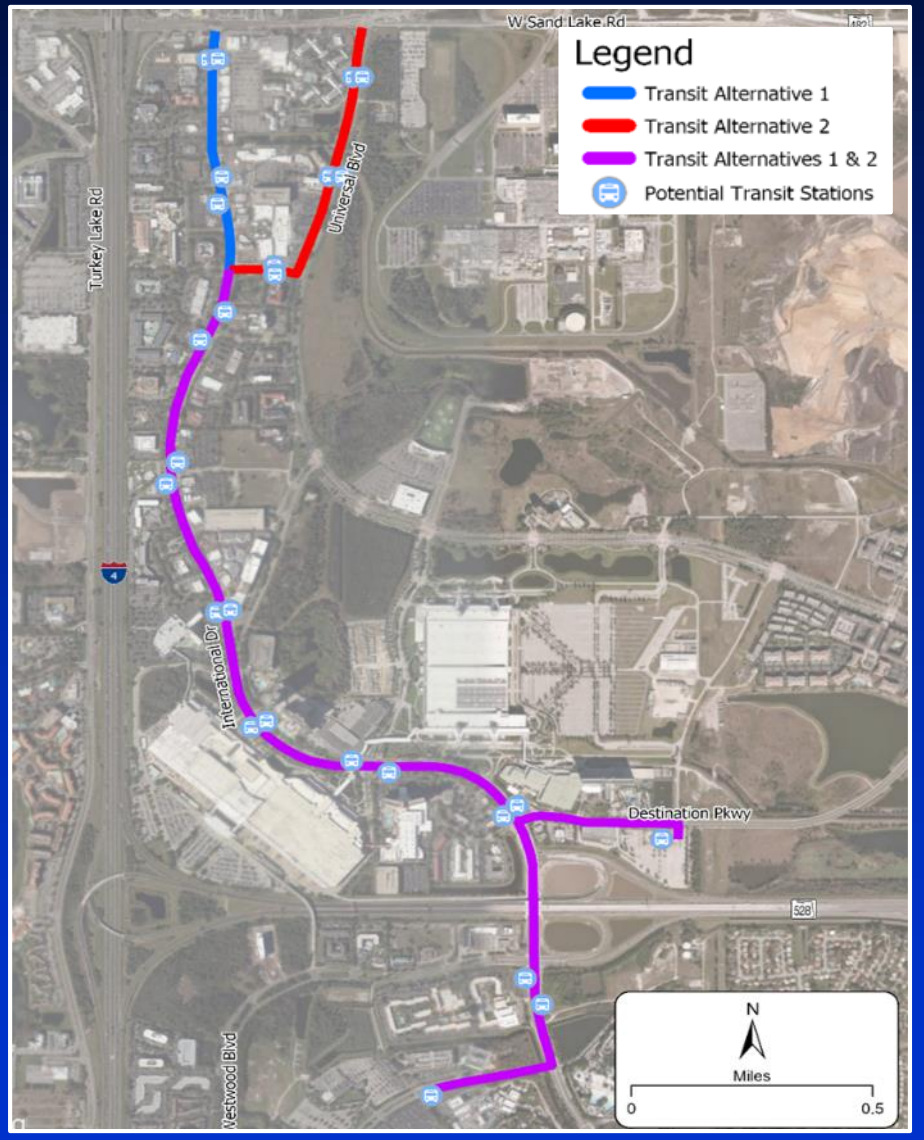
Medium – Fair

Low – Not Favorable

Evaluation of Viable Alternatives

Viable Alternatives

- **Routing Alignment**
  - Alternative 1: I-Drive Sand Lake Road to Destination Parkway to Sea Harbor Drive
  - Alternative 2: Universal Boulevard / Sand Lake Road to Via Mercado, I-Drive to Destination Parkway to Sea Harbor Drive



Evaluation of Viable Alternatives

Curb Running vs. Median Running Position

Comparison of Key Factors

- Vehicle Conflicts
- Pedestrian Access and Safety
- Cost Implications
- Transit Operations
- Right-of-Way and Easements
- Median and Landscaping Impacts

Presentation Outline

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Study Recommendation

Proposed Transit System

- Vehicle Technology
  - Premium Bus
- Alignment
  - I-Drive from Sand Lake Road to Sea Harbor Drive, including a spur on Destination Parkway
- Stations
  - Curbside

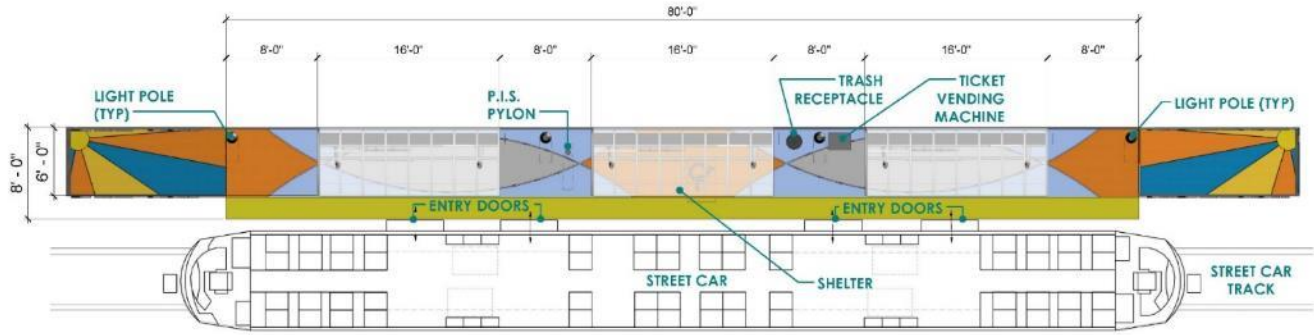
Study Recommendation

Vehicle Technology

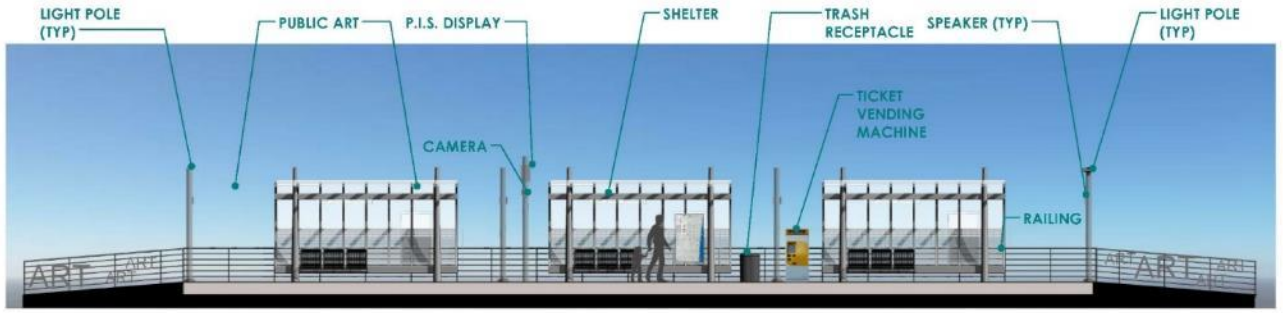
- Premium bus technology
  - Similar features as streetcar
  - Lower capital and operating costs
  - Increased flexibility

Study Recommendation

Example – Curb Side Stop



TYPICAL SINGLE SIDED
PLATFORM PLAN - OPTION 2



TYPICAL SINGLE SIDED PLATFORM
ELEVATION - OPTION 2

PARSONS

Study Recommendation

Premium Transit Stations

Mango's, VUE 360, Wyndham Orlando Resort, Embassy Suites

ICON Park, Sonesta ES Suites, Kings Dinning &Entertainment, YMCA

Senor Frogs, Olive Garden, Embassy Suites, Hyatt Place, Residence Inn, Homewood Suites

Dave & Busters, Air Orlando, Pointe Orlando, Wonder Works

Pointe Orlando, Rosen Inn, Rosen Plaza

OCCC West Building, Hyatt Regency Orlando

OCCC West Building, OCCC N/S Building, Rosen Centre Hotel

OCCC N/S Building, Hilton Orlando

OCCC N/S Building, Destination Parkway SuperStop, Hilton Orlando

Double Tree, Aquatica, New developments along Westwood Blvd

SeaWorld, Renaissance Orlando, Double Tree

Study Recommendation

Proposed Transit System Operations

- **Premium Transit Operations**
  - 10-minute headways
  - 6 a.m. to 1 a.m. (start hour)
  - 7 days/week
- **Vehicle requirements**
  - 7 peak premium bus vehicles
  - 10 total premium bus vehicles

Average Speed	Station to Station Travel Time	Dwell Time	Layover Time	Turnaround Time*	One-Way Travel Time **	Cycle Time ***
12 mph	18.3 min	4.5 min	2.0 min	4.3 min	29.15 min	64.1 min

Weekdays of Operation	Frequency	Span of Service	Weekday Peak Span	Weekday Peak One-Way Trips	Weekday Off-Peak One-Way Trips	Weekend Days of Operation*	Weekend One-Way Trips
254	10 min	20 hrs	4 hrs	24	96	111	120

Note: * Includes weekend days and holidays

Revenue Hours			Revenue Miles		
Annual Weekday Hours	Annual Weekend Day Hours	Annual Revenue Hours	Annual Weekday Miles	Annual Weekend Day Miles	Annual Revenue Miles
35,560	15,540	51,100	265,176	115,884	381,060

Note: Data presented in this table was estimated and has not been field tested.
** Turnaround time = ½ of total turnaround time to account for different patterns at north and south ends*
*** One-way travel time = station to station travel time + dwell time + layover + turnaround time*
****Cycle time is the one-way travel time x 2 (for bidirectional service) + 10% for congestion during turnaround*

Study Recommendation

Capital and Operating Costs

- **Key Factors**
  - **$94 per revenue hour**
  - **Frequent Service (10 minute headways, 6 a.m. to 1 a.m., 7 days/week)**
  - **12 MPH and 25 to 29 minutes one-way run-time, added dwell time and layover**

Estimated Capital Costs	Proposed Premium Transit
Current Year Costs - 2020	$83M
YOE Costs – 2025	$96M

Cost, Ridership and Revenue	O&M Estimate (in Millions 2020 Dollars)
Total Operating and Maintenance Cost	$4.8
Projected Annual Ridership	1,498,000
Estimated Average Fare (LYNX 2019)	$0.96
Farebox Revenue	$1.4
Net Operating and Maintenance Costs	**$3.4**

Study Recommendation

Transit Hub Potential Locations

1	Destination Parkway SuperStop
2	Destination Parkway/ I-Drive
3	I-Drive/Convention Way
4	Convention Way across OCCC
5	Universal Blvd/Convention Way

Study Recommendation

Federal and State Funding Options

Federal Funding		
Capital Investment Grant Program (CIG) -New and Small Starts	Better Utilizing Investments to Leverage Development (BUILD)	Flexible Funding Programs

State Funding		
New Starts Transit Program	Public Transit Block Grant Program	FDOT Discretionary Programs - Transit Service Development -Transit Corridor

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Public Involvement

- **Project Advisory Group**
  - 50+ members representing key stakeholders
  - 4 meetings (December 2019 – July 2020)
- **Agency Coordination**
  - Orange County Departments, OCPS, FDOT, FDEP, OCSO, City of Orlando
- **Small Group Meetings**
  - I-Drive Chamber, I-Drive Improvement District, I-Drive CRA, Universal Orlando, Vista Cay Condominiums, Tangelo Park, Hilton Orlando, Rosen Hotels, Plaza International, Wyndham Hotels
- **Community Meetings, Newsletters, Project Website**
  - 2 Community meetings

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Next Steps

- Schedule Public Hearing before the Board of County Commissioners (May/June 2021)
- Recommended Implementation Strategy
  - Coordination with LYNX (MOU)
  - Coordination with I-Drive Improvement District (I-Ride Trolley)
  - Coordination with I-Drive Transit Lane Project
  - Application for Federal and State funding
  - Identification of local funds needed
  - Inclusion in MetroPlan's TIP and FDOT's 5 Year Work Program

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Summary

- TFATA serves diverse travel markets and needs, and sustains economic competitiveness and development
- Study reviewed advanced vehicle technologies, alignments, and operating configurations
- Recommended alternative is a premium bus technology operating with the curb side stations
- Extensive public involvement engaged a range of stakeholders
- Following public hearing, next steps involve coordination with LYNX and funding applications

Board of County Commissioners

Worksession

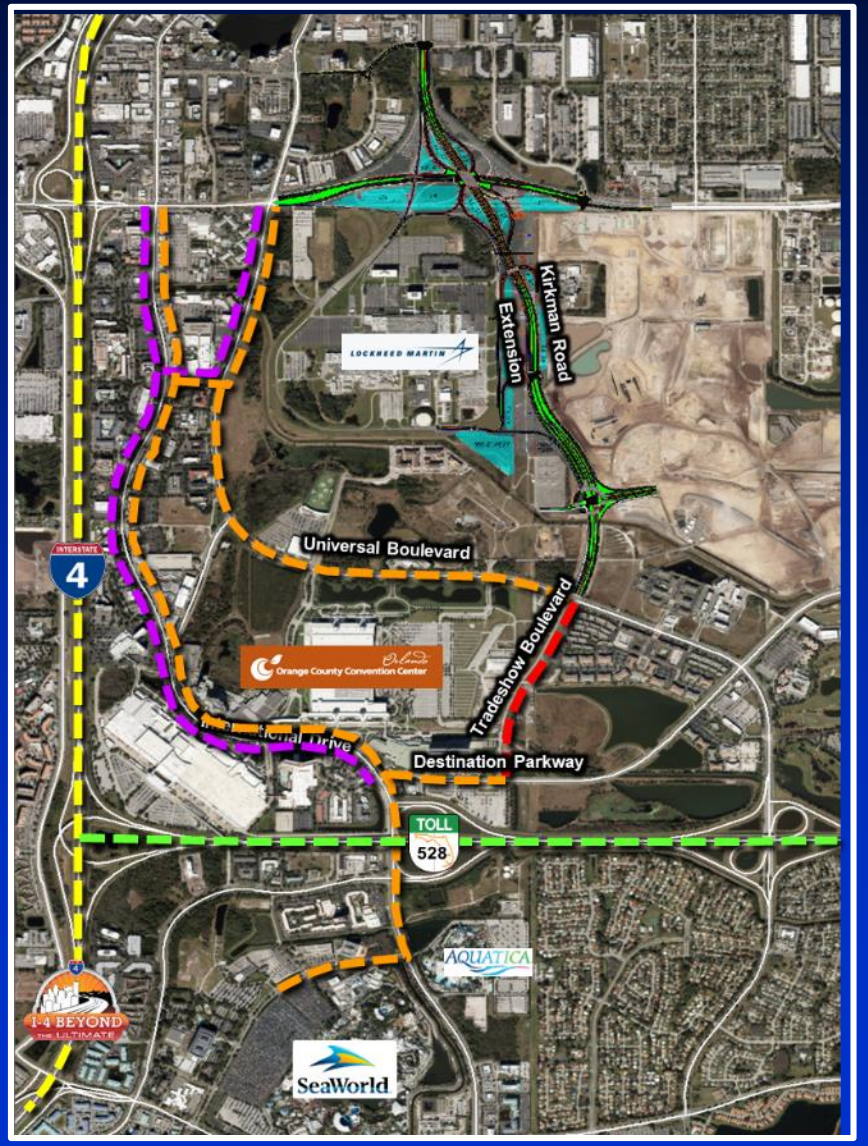
Tradeshow Boulevard Roadway Conceptual Analysis Study

April 27, 2021

Background

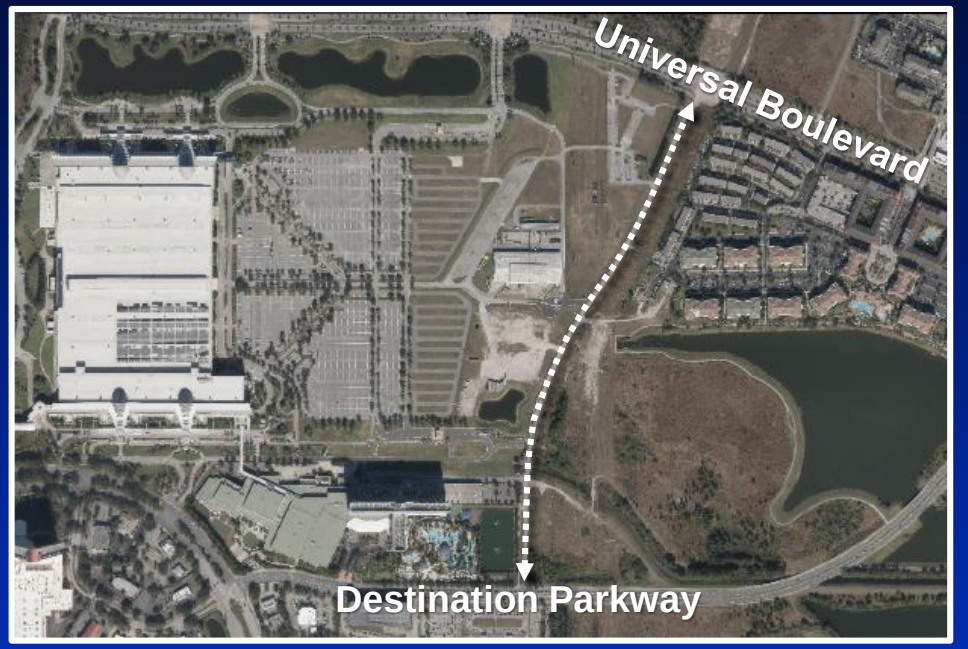
Scope of Work

- Transportation project coordination
  - I-4 Beyond the Ultimate
  - SR 528 BeachLine Expressway
  - Kirkman Road Extension
  - International Drive Transit Lanes
- Corridor-specific data collection
- Alternatives analysis
- Right-of-way needs documentation
- Public engagement



Purpose and Need

- Improve system linkage between Universal Blvd and Destination Parkway
- Increase capacity to future accommodate automobile, freight, and transit demands
- Address existing safety and enhancement concerns



Existing Conditions

- Two lane roadway, 35mph
- Sidewalks only adjacent to Hilton
- No bicycle features
- Served by LYNX Route 111
- Analysis also evaluated:
  - Crash history
  - Utility infrastructure
  - Geotechnical and contamination
  - Wetlands and protected species

Alternatives Analysis

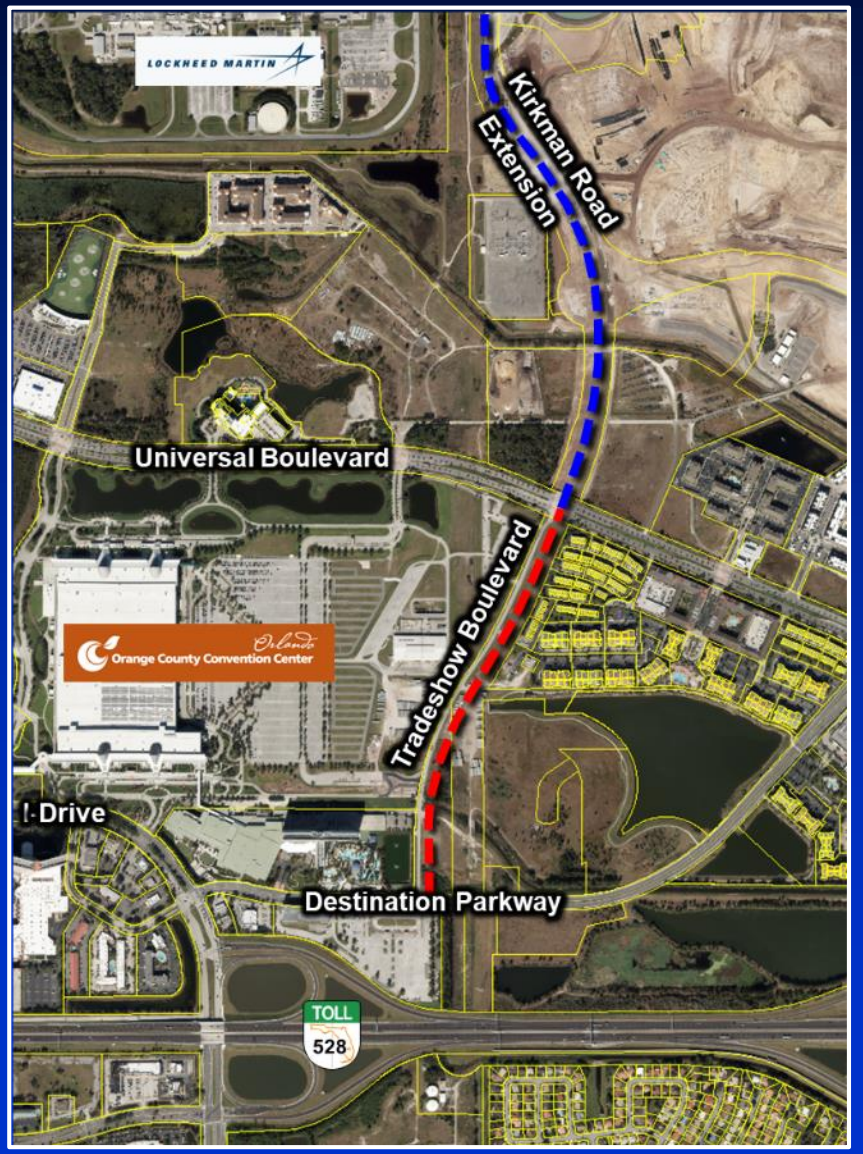
Tradeshow Boulevard – Lanes Analysis

Existing Average Number of Vehicle Per Day (Year 2020)	Projected Growth Factor for I-Drive Analysis	Projected Average Number of Vehicle Per day (Design Year 2045)
6,000	8.5%	20,000

2020 AADT - 6,000

4-Lane +2 Transit Lane (AADT < 30,000)

6-Lane + 2 Transit Lane (AADT > 30,000)



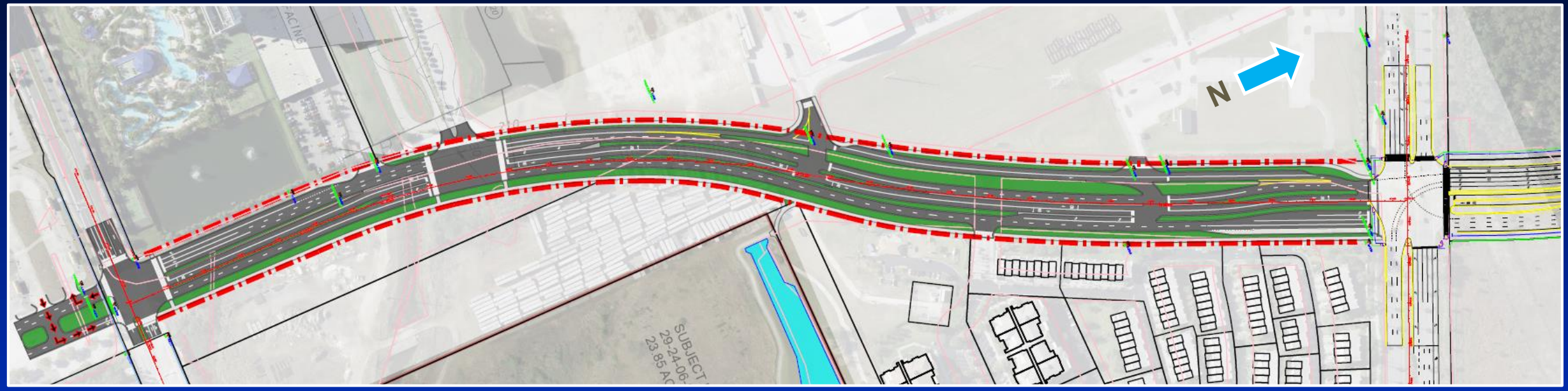
Alternatives Analysis

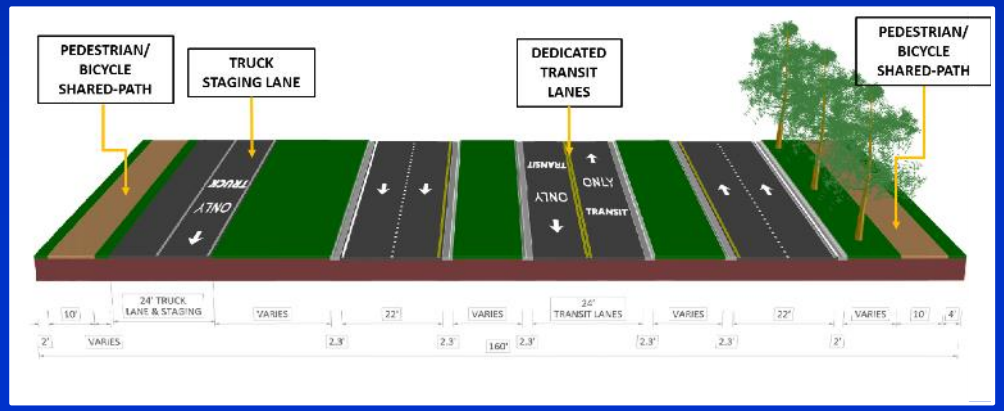
- **Alternative 1 Recommended**
  - Low wetland impacts
  - More protected Ped/Bike crossing locations
  - No right turn transit conflicts
  - Transit aligned for Kirkman Road and LYNX Superstop

Recommended

Evaluation Criteria	No Build Alternative No Improvements	Alternative Concept 1 4 General Use Lanes + 2 Median Transit Lanes + Truck Access Road	Alternative Concept 2 4 General Use Lanes + 2 Curbside Transit Lanes + Truck Access Road	Alternative Concept 3 6 General Use Lanes + 2 Curbside Transit Lanes
Right-of-Way				
Acres Impacted (roadway)	0	14.2	14.2	14.2
Acres Impacted (pond)	0	0	0	0
Number of Business Parcels	0	0	0	0
Number of Unimproved Parcels	0	2	2	2
Traffic Operations and Safety				
Crosswalks (Intersection)	0	4	4	6
New Signal/Signal Phasing/Timing	0	4	2	2
Social, Natural, and Physical Impacts				
Wetland (acre)	0	0.02	0.02	0.09
Archaeological/Historical Sites	0	0	0	0
Potential Contamination Sites Impacted	0	0	0	0
Floodplains (acre-feet)	0	0	0	0
Potential for Noise Impacts (high/med/low)	N/A	Low	Low	Low
Threatened and Endangered Species Impacts (high/med/low)	N/A	Low	Low	Low
Potential for Major Utility Impacts	No	Yes	Yes	Yes
Roadway Improvements				
Dedicated Bus Lanes	✗	✓	✓	✓
Dedicated Truck Staging Lane	✗	✓	✓	✗
Median Bus Lane	✗	✓	✗	✗
Curbside Bus Lane	✗	✗	✓	✓
Estimated Project Costs				
Construction Costs	No cost	$9,220,000	$9,000,000	$9,050,000
Contingency Costs (25% of Construction cost)	No cost	$2,305,000	$2,250,000	$2,262,500
Design (15% of Construction)	No cost	$1,728,750	$1,687,500	$1,696,875
CEI (10% of Construction)	No cost	$1,152,500	$1,125,000	$1,131,250
Right-of-Way Acquisition	No cost	$10,000,000	$10,000,000	$10,000,000
Mitigation Banking	No cost	$2,500	$2,500	$11,250
Total Costs	No cost	$24,408,750	$24,065,000	$24,151,875

Recommended Tradeshow Boulevard Concept



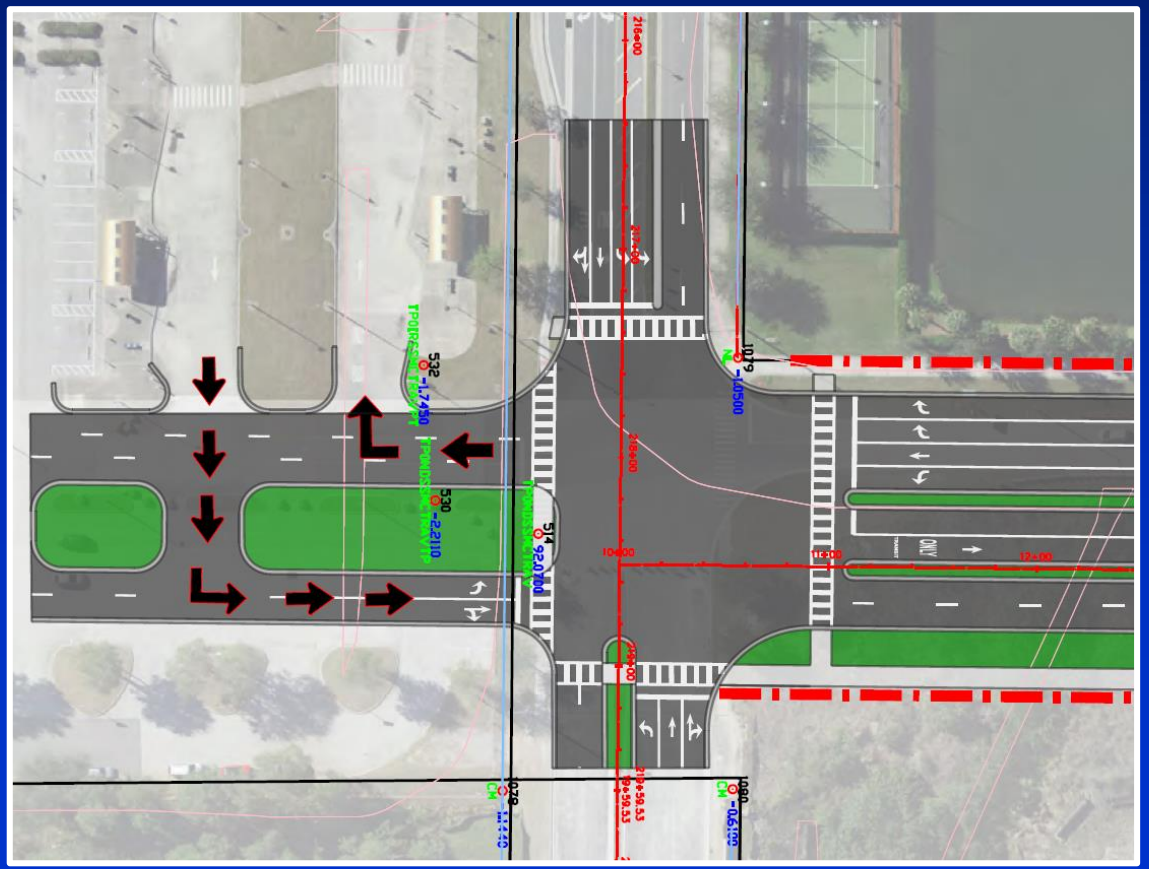


IMPROVEMENTS
Alignment re-aligned to accommodate transit to/from Destination Parkway Superstop
Full access opening
Median width reduced
Driveway access provided for northbound Transit
Access modified to accommodate truck turning movements
Truck only/Truck staging lane

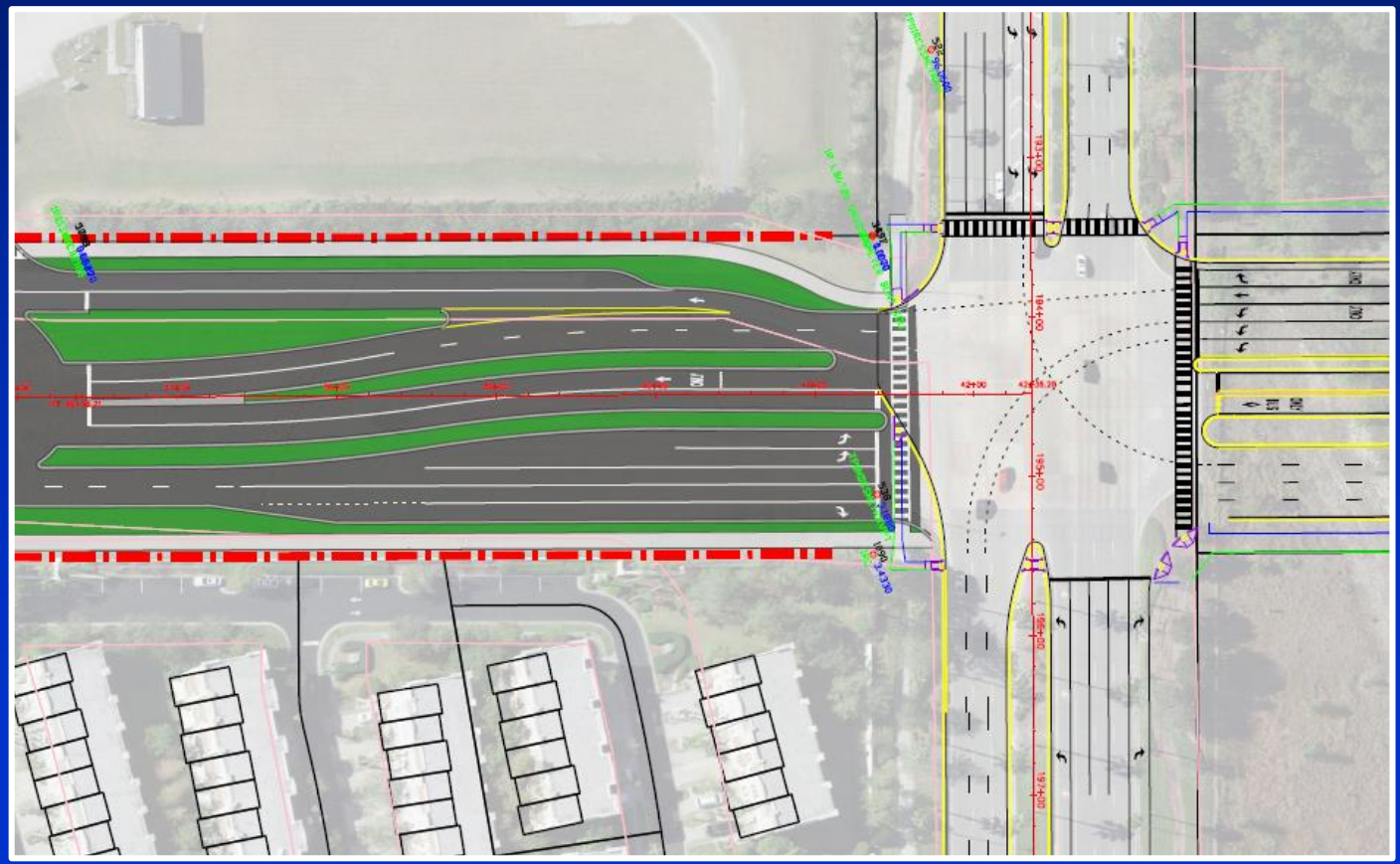
Recommended Tradeshow Boulevard Concept

Major Intersections

Destination Parkway Intersection

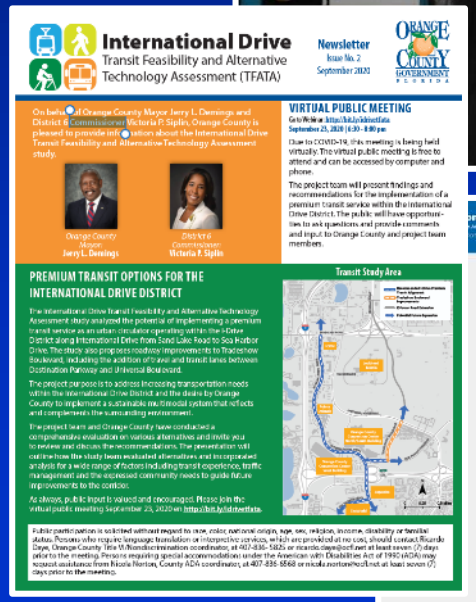


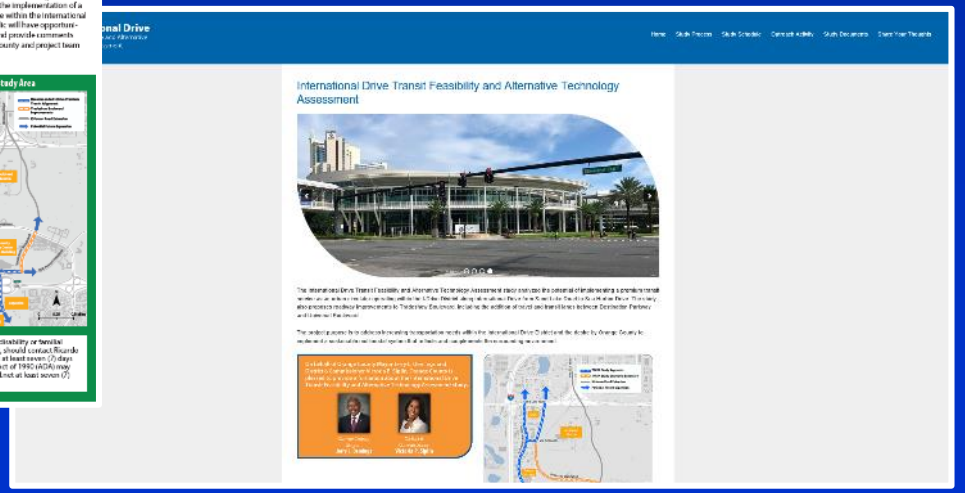
Universal Boulevard Intersection



Public Involvement

- Utilized many elements of the TFATA Public Involvement Plan
  - Project Advisory Group meetings
  - Agency and small group meetings
  - Public meetings
  - Website and Newsletters


International Drive
Transit Feasibility and Alternative Technology Assessment (TFATA)
Newsletter
Issue No. 2
September 2020
ORANGE COUNTY GOVERNMENT FLORIDA
VIRTUAL PUBLIC MEETING
PREMIUM TRANSIT OPTIONS FOR THE INTERNATIONAL DRIVE DISTRICT
Transit Study Area


International Drive Transit Feasibility and Alternative Technology Assessment

Summary and Next Steps

- Tradeshow Boulevard RCA establishes the purpose and need to expand the road
- Schedule Public Hearing before the Board of County Commissioners (May/June 2021)
- Continued coordination with Kirkman Road Extension and property owners